IN THE CLAIMS:

Kindly cancel Claims 1-26 without prejudice or disclaimer.

Kindly add Claims 27-66 as set forth below.

27. For use with a power converter including a synchronous rectifier circuit having switching circuitry with at least one synchronous rectifier device and adapted to rectify substantially alternating current to produce substantially direct current, a control circuit, comprising:

a sensor capable of sensing a characteristic of said power converter;

comparison circuitry capable of comparing said characteristic with a reference and developing a control signal in accordance therewith; and

synchronous rectifier control circuitry, coupled to said comparison circuitry, adapted to disable said at least one synchronous rectifier device as a function of said control signal to thereby prevent substantial reverse power flow through said power converter.

28. The control circuit as recited in claim 27 wherein said power converter, further comprises:

a power transformer having primary and secondary windings, said secondary winding being coupled to said switching circuitry; and

at least one power switch occasionally coupling said primary winding to a source of electrical power.

29. The control circuit as recited in claim 28 wherein said power converter further comprises a clamping circuit, coupled to said power transformer, adapted to limit a voltage across said transformer during at least a portion of a non-conduction interval of said at least one power switch.

30. The control circuit as recited in claim 27 wherein said synchronous rectifier control circuitry is adapted to disable said at least one synchronous rectifier device during one of a start-up and shut-down period of said power converter.

31. The control circuit as recited in claim 27 wherein said power converter is parallel-coupled to a second power converter, said synchronous rectifier control circuitry adapted to disable said at least one synchronous rectifier device thereby preventing said second power converter from causing said substantial reverse power flow.

32. The control circuit as recited in claim 31 further comprising an active load-sharing circuit adapted to effect load sharing between said power converter and said second power converter.

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33. The control circuit as recited in claim 27 wherein said switching circuitry comprises at least one discrete diode.

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34. The control circuit as recited in claim 27 wherein said sensor is selected from the group consisting of:

a current transformer in electrical communication with an output of said power converter;

a resistor in electrical communication with said output; and

a Hall effect current sense device coupled in series with said output.

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35. The control circuit as recited in claim 27 wherein said switching circuitry comprises a plurality of synchronous rectifier devices, said synchronous rectifier control circuitry adapted to disable all of said plurality of synchronous rectifier devices.

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36. The control circuit as recited in claim 27 further comprising detection circuitry capable of detecting parallel operation between said power converter and a second power converter, said detection circuitry allowing said synchronous rectifier control circuitry to disable said at least one synchronous rectifier device only when said power converter is parallel-coupled to said second power converter.

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37. For use with a power converter including a synchronous rectifier circuit having switching circuitry with at least one synchronous rectifier device and adapted to rectify

substantially alternating current to produce substantially direct current, a method for controlling said synchronous rectifier circuit, comprising:

sensing a characteristic of said power converter;

comparing said characteristic with a reference and developing a control signal in accordance therewith; and

disabling said at least one synchronous rectifier device as a function of said control signal to thereby prevent substantial reverse power flow through said power converter.

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38. The method as recited in claim 37 wherein said power converter, further comprises:

a power transformer having primary and secondary windings, said secondary winding being coupled to said switching circuitry; and

at least one power switch occasionally coupling said primary winding to a source of electrical power.

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39. The method as recited in claim 38 wherein said power converter further comprises a clamping circuit, coupled to said power transformer, adapted to limit a voltage across said power transformer during at least a portion of a non-conduction interval of said at least one power switch.

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40. The method as recited in claim 37 wherein said disabling said at least one synchronous rectifier device occurs during one of a start-up and shut-down period of said power converter.

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41. The method as recited in claim 37 wherein said power converter is parallel-coupled to a second power converter, said disabling said at least one synchronous rectifier device thereby preventing said second power converter from causing said substantial reverse power flow.

42. The method as recited in claim 41 wherein said power converter further comprises an active load-sharing circuit that effects load sharing between said power converter and said second power converter.

43. The method as recited in claim 37 wherein said switching circuitry comprises at least one discrete diode.

44. The method as recited in claim 37 wherein said sensing is performed by a sensor selected from the group consisting of:

a current transformer in electrical communication with an output of said power converter;

a resistor in electrical communication with said output; and

a Hall effect current sense device coupled in series with said output.

45. The method as recited in claim 37 wherein said switching circuitry comprises a plurality of synchronous rectifier devices, said disabling further disabling all of said plurality of synchronous rectifier devices as said function of said control signal.

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46. The method as recited in claim 37 wherein said power converter further comprises detection circuitry capable of detecting parallel operation between said power converter and a second power converter.

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47. A power converter having an input and an output, comprising:

at least one power switch coupled to said input;

a power transformer having primary and secondary windings, said primary winding coupled to said at least one power switch;

a synchronous rectifier circuit, interposed between said secondary winding and said output, including switching circuitry with at least one synchronous rectifier device and adapted to rectify substantially alternating current to produce substantially direct current; and

a control circuit, coupled to said synchronous rectifier circuit, including:

a sensor capable of sensing a characteristic of said power converter,

comparison circuitry capable of comparing said characteristic with a reference and developing a control signal in accordance therewith, and

synchronous rectifier control circuitry, coupled to said comparison circuitry, adapted to disable said at least one synchronous rectifier device as a function of said control signal to thereby prevent substantial reverse power flow through said power converter.

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48. The power converter as recited in claim 47 further comprising a clamping circuit, coupled to said power transformer, adapted to limit a voltage across said power transformer during at least a portion of a non-conduction interval of said at least one power switch.

49. The power converter as recited in claim 47 wherein said synchronous rectifier control circuitry is adapted to disable said at least one synchronous rectifier device during one of a start-up and shut-down period of said power converter.

50. The power converter as recited in claim 47 wherein said power converter is parallel-coupled to a second power converter, said synchronous rectifier control circuitry adapted to disable said at least one synchronous rectifier device thereby preventing said second power converter from causing said substantial reverse power flow.

51. The power converter as recited in claim 47 wherein said control circuit further comprises an active load-sharing circuit adapted to effect load sharing between said power converter and said second power converter.

52. The power converter as recited in claim 47 wherein said switching circuitry comprises at least one discrete diode.

53. The power converter as recited in claim 47 wherein said sensor is selected from the group consisting of:

a current transformer in electrical communication with said output;

a resistor in electrical communication with said output; and

a Hall effect current sense device coupled in series with said output.

54. The power converter as recited in claim 47 wherein said switching circuitry comprises a plurality of synchronous rectifier devices, said synchronous rectifier control circuitry adapted to disable all of said plurality of synchronous rectifier devices.

55. The power converter as recited in claim 47 wherein said control circuit further comprises detection circuitry capable of detecting parallel operation between said power converter and a second power converter, said detection circuitry allowing said synchronous rectifier control circuitry to disable said at least one synchronous rectifier device only when said power converter is parallel-coupled to said second power converter.

56. The power converter as recited in claim 47 further comprising an output capacitor and inductor interposed between said synchronous rectifier circuit and said output.

57. A power system having first and second power converters, each of said first and second converters, comprising:

a synchronous rectifier circuit including switching circuitry having at least one synchronous rectifier device and adapted to rectify substantially alternating current to produce substantially direct current;

a control circuit, coupled to said switching circuitry, adapted to control said at least one synchronous rectifier device as a function of a characteristic of said power system thereby to prevent one of said first and second power converters from creating substantial reverse power flow through another of said first and second power converters; and

an active load-sharing circuit coupled to said first and second power converters adapted to effect load sharing therebetween.

58. The power system as recited in claim 57 wherein each of said first and second power converters, further comprises:

a power transformer having primary and secondary windings, said secondary winding being coupled to said switching circuitry; and

at least one power switch occasionally coupling said primary winding to a source of electrical power.

59. The power system as recited in claim 58 wherein each of said first and second power converters further comprises a clamping circuit, coupled to said power transformer, adapted to limit a voltage across said transformer during at least a portion of a non-conduction interval of said at least one power switch.

60. The power system as recited in claim 57 wherein said control circuit is adapted to disable said at least one synchronous rectifier device during one of a start-up and shut-down period of said power system.

61. The power system as recited in claim 57 wherein said first power converter is parallel-coupled to said second power converter, said control circuit adapted to control said at least one synchronous rectifier device thereby preventing said second power converter from causing said substantial reverse power flow.

62. The power system as recited in claim 57 said at least one synchronous rectifier device is a metal oxide semiconductor field effect transistor (MOSFET).

63. The power system as recited in claim 57 wherein said switching circuitry comprises at least one discrete diode.

64. The power system as recited in claim 57 wherein said control circuit includes a sensor adapted to measure said characteristic of said power system selected from the group consisting of:

a current transformer in electrical communication with an output of said power system;

a resistor in electrical communication with said output; and

a Hall effect current sense device coupled in series with said output.

65. The power system as recited in claim 57 wherein said switching circuitry comprises a plurality of synchronous rectifier devices, said control circuit adapted to control all of said plurality of synchronous rectifier devices.

66. The power system as recited in claim 57 further comprising detection circuitry capable of detecting parallel operation between said first and second power converters, said detection circuitry allowing said control circuit to control said at least one synchronous rectifier device only when said first power converter is parallel-coupled to said second power converter.